

Amendments to the Claims

This listing of claims will replace the originally filed claims in the application.

Listing of Claims:

Claims 1 – 11 (cancelled)

Claim 12 (new): A method for producing hydrogen by Pressure Swing Adsorption in a PSA unit of a feedstock gas at a first pressure (P_1) containing hydrogen, with compressed waste being sent to a fuel gas mixture distribution network at a second pressure (P_2), lower than the pressure (P_1), and containing hydrogen, involving the step of tapping off a fraction of the fuel gas mixture flowing through the network, of compressing it more or less to the first pressure (P_1) and of injecting it by way of additional feedstock gas into the PSA unit.

Claim 13 (new): The method of claim 12, characterized in that it involves the step of injecting the fraction of fuel gas mixture into the feedstock gas.

Claim 14 (new): The method of claim 12, characterized in that the first pressure (P_1) ranges between about 15 and 45 bar and the second pressure (P_2) ranges between about 3 and 8 bar.

Claim 15 (new): The method of claim 12, characterized in that the waste is extracted from the pressure swing adsorption unit at a third pressure (P_3) ranging between about 1.1 and 2 bar.

Claim 16 (new): The method of claim 12, characterized in that the fuel gas mixture contains at least 30% hydrogen.

Claim 17 (new): The method of claim 16, characterized in that the fuel gas mixture contains between about 35 and 50% hydrogen.

Claim 18 (new): An installation for implementing the method as claimed in one of the preceding claims, comprising:

- a) at least one feedstock gas supply pipe;
- b) at least one line of a fuel gas mixture distribution network;

- c) at least one PSA unit for separating gases by adsorption having one inlet connected to the feedstock gas pipe, a production gas outlet and at least one waste gas outlet;
- d) a first compressor connecting the waste gas outlet to the line; and
- e) a second compressor connecting the line to the inlet of the PSA unit.

Claim 19 (new): The installation of claim 18, characterized in that the second compressor is placed in a pipe connecting the line to the feedstock gas pipe.

Claim 20 (new): The installation of claim 18, characterized in that the second compressor is connected to the line upstream of the latter's connection to the first compressor.

Claim 21 (new): The installation of claim 18, characterized in that the first and second compressors use common subassemblies.

Claim 22 (new): The installation of claim 21, characterized in that the first and second compressors have a common driveline.